# Chemical Manufacturing Area Source Standards Final Rule

March 25, 2010

# Area Source Program

- CAA Section 112(k) includes requirements for addressing HAP emissions from area sources
- Urban air toxics strategy was published on July 19, 1999
  - Identified 30 HAP as Urban HAP
  - Listed 70 area source categories (that emit over 90 percent of these HAP)
  - CMAS rule covers nine area source categories
- There are seven other area source rules which apply to chemical industry

# Area Source Categories Covered by CMAS

- Agricultural Chemicals and Pesticides Manufacturing
- Cyclic Crude and Intermediate Production
- Industrial Inorganic Chemical Manufacturing
- Industrial Organic Chemical Manufacturing
- Inorganic Pigments Manufacturing
- Miscellaneous Organic Chemical Manufacturing
- Plastic Materials and Resins Manufacturing
- Pharmaceutical Production
- Synthetic Rubber Manufacturing

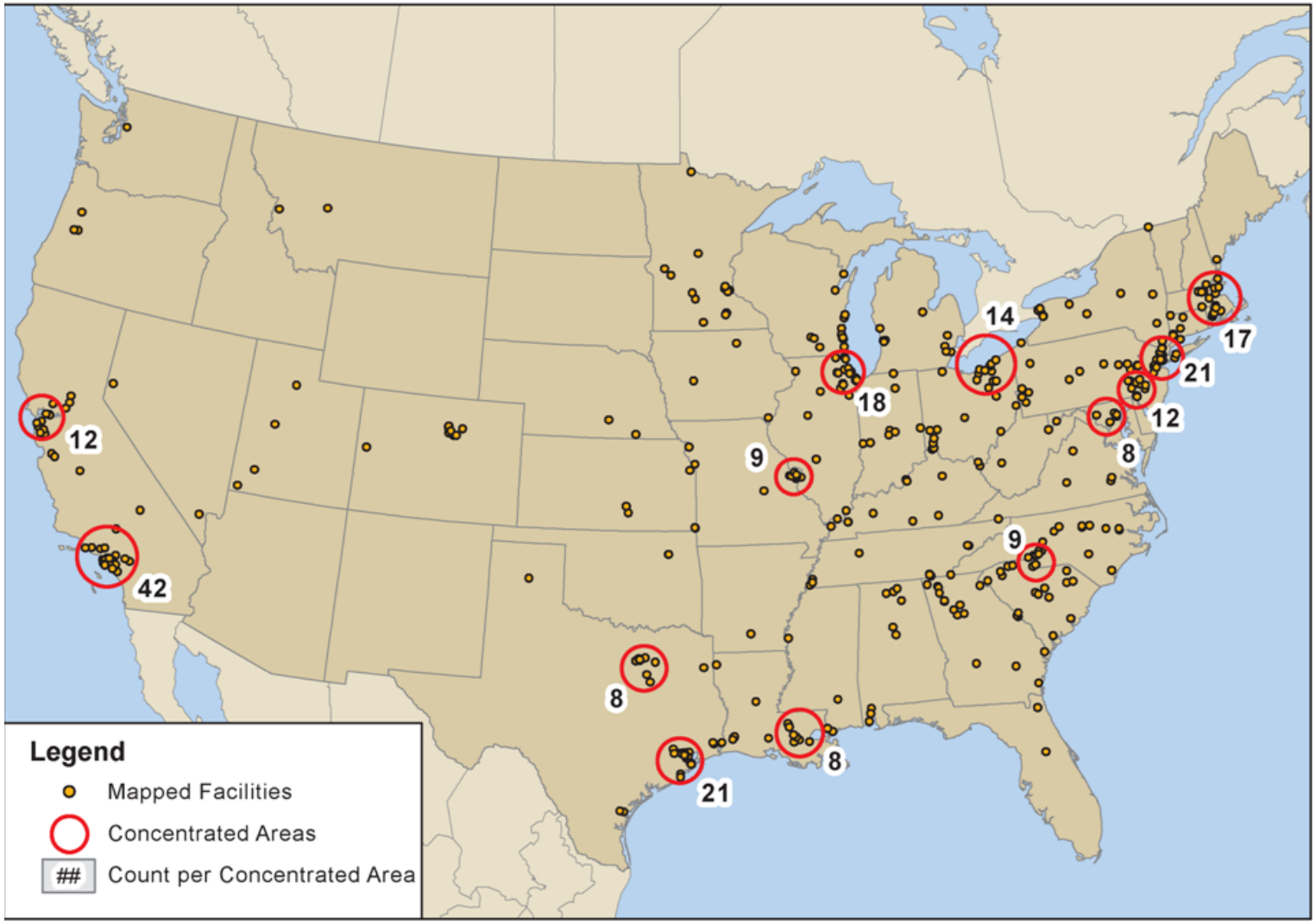
# Other Chemical Area Source Rules

- Acrylic Fibers/Modacrylic Fibers Production
- Chemical Preparation
- Carbon Black
- Chemical Manufacturing: Chromium Compounds
- Polyvinyl Chloride and Copolymers Production
- Paint and Allied Coatings and
- Mercury Cell Chlor-Alkali Manufacturing

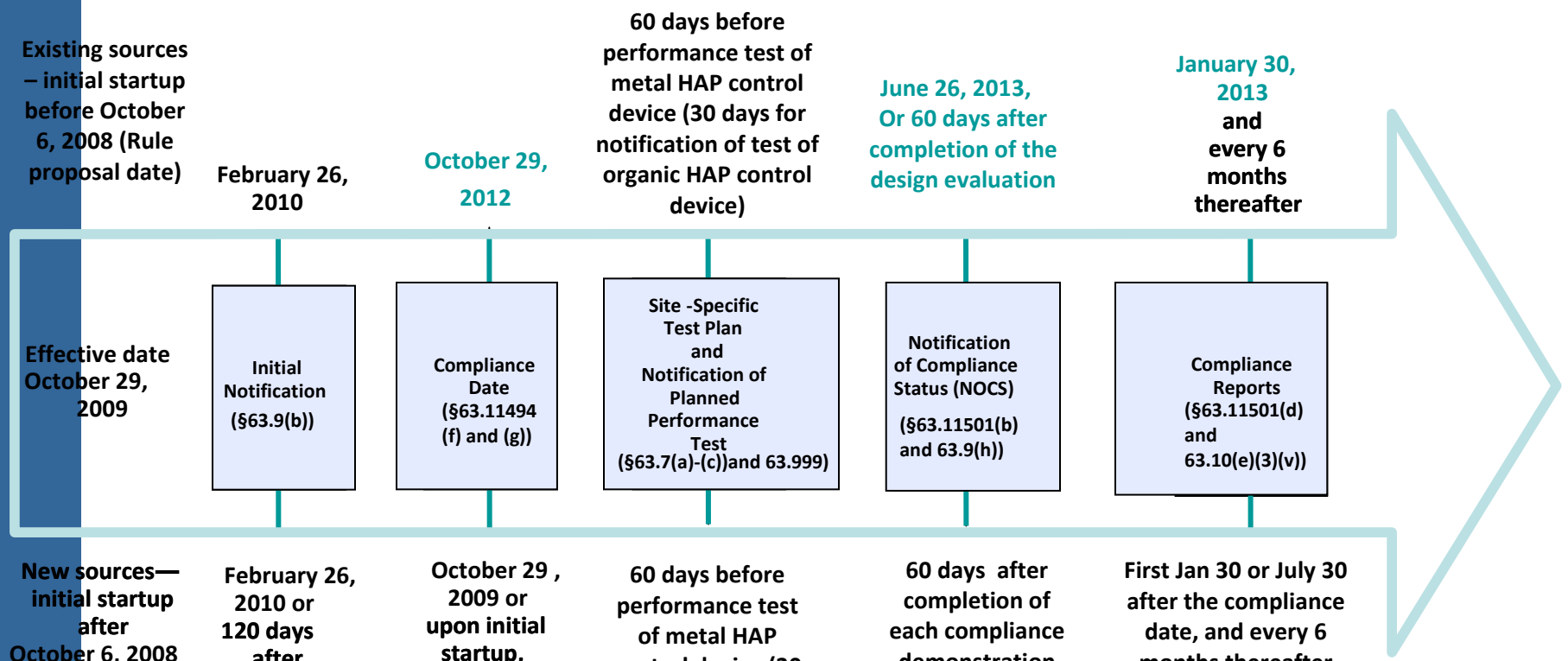
# CMAS Rulemaking

- CMAS covers approximately 450 of facilities which emit at least one of the 15 Urban HAP
- Baseline HAP emissions 1750 tpy for the 450 facilities
- Anticipated emission reductions
  - 210 tpy organic HAP (350 tpy VOC)
  - 41 tpy metal HAP (570 tpy PM)
- Capital cost is $2.8 million and the annualized cost is $3.2 million per year
- CMAS rule proposed October 6, 2008
- CMAS rule promulgated October 29, 2009

# CMAS Facility Locations



# Compliance Dates CMAS Rule



# Rule Applicability

- Applies to each chemical manufacturing process unit (CMPU) located at an area source that uses as feedstocks, generates as byproducts, or produces as products any of the 15 HAP in Table 1
- Table 1 HAP at concentrations > 0.1 percent for carcinogens and > 1.0 percent for noncarcinogens
- Hydrogen halide and halogen HAP (*i.e., hydrogen chloride, chlorine,* and *hydrogen fluoride*) at affected sources, when these HAP are generated in combustion-based emission control devices that are used to meet the proposed standards for Table 1 Organic HAP

# Table 1 HAP

- Table 1 organic HAP
  - 1,3-butadiene;
  - 1,3-dichloropropene;
  - acetaldehyde;
  - chloroform;
  - ethylene dichloride;
  - methylene chloride;
  - hexachlorobenzene;
  - hydrazine;
  - quinoline
- Table 1 Metal HAP
  - Compounds of arsenic, cadmium, chromium, lead, manganese, or nickel

# Rule Applicability

- Does not apply to:
  - Affected sources at one of the seven other chemical manufacturing area source categories
  - Manufacture of radioactive elements or isotopes, radium chloride, radium luminous compounds, strontium, uranium
  - Manufacture of photographic film, paper, and plate where the material is coated with or contains chemicals.
  - Fabricating, compounding, extruding, drawing operations[1]

[1] If no HAP used or if purpose is not remove residual HAP

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# Rule Applicability

- Does not apply to:
  - Manufacture of chemicals classified in NAICS code 325222, 325314, 325413, or 325998
    - Non-cellulosic fiber
    - Fertilizer mixing
    - In vitro pharmaceutical
    - Chemical preparations
  - Research and development facilities
  - Quality assurance/quality control laboratories.
  - Defined ancillary activities
  - Metal HAP in structures or existing as articles

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325222- Non cellulosic fiber
325314 - Fertilizer mixing
325413 - in vitro pharma
325998 - Misc that are not MON

ctsuser, 1/19/2010

# Affected Source

The facility-wide collection of CMPUs that use, generate, or produce one or more of the Table 1 HAP and the wastewater systems and heat exchange systems associated with the CMPUs that use Table 1 HAP

# CMPU

- Includes all process vessels, equipment, and activities necessary to operate a chemical manufacturing process that produces a material or a family of materials described by North American Industry Classification System (NAICS) code 325.
- Consists of one or more unit operations and any associated recovery devices.
- Includes each storage tank, transfer operation, surge control vessel, and bottoms receiver associated with the production of such NAICS code 325 materials

# Management Practices

- Conduct quarterly inspections of CMPU and heat exchange systems
- Equip vessels with covers and keep in closed position
- Submerged loading for transfer operations

# Emission Limits and Work Practices

- Metal HAP vent - 95% reduction if UHAP process emissions greater than 400 lb/yr (see NNNNNN)
- Organic HAP continuous vent - 95% reduction if TRE<1 (see HON)
- Organic HAP batch vents – 85% reduction if greater than 10,000 lb/yr per process (see MON)
- Heat exchange system – monitoring if system greater than 8000 gpm (see HON)
- Wastewater operations - separate and recover organic phase before discharging
- Storage tanks – Kb cutoffs w/ SS and WW control

# Recordkeeping requirements for CMAS rule

| | Initial compliance demonstration | Inspections and repairs | Control device monitoring data | Small vents |
|---|---|---|---|---|
| Continuous vents | TRE determination | Yes | Yes, if applicable | Monitoring data for recovery device |
| Batch vents | Organic HAP emissions per process | Yes | Yes, if applicable | Annual emissions (number of batches) |
| Metal HAP vents | Metal HAP emissions | Yes | Yes, if applicable | Annual emissions |
| Wastewater | Table 7 HAP concentration | | No | |
| Storage tanks | Tank size and vapor pressure | Yes | Yes, if applicable | |
| Cooling towers | Monitoring plan | Yes | Cooling water monitoring | |
| Equipment inspections | No | Yes | No | |

# Reporting requirements for CMAS rule

| | Compliance certification | Test reports | Semiannual reports |
|---|---|---|---|
| Continuous vents | Yes | Testing or engineering assessment | Deviations or process change |
| Batch vents | Yes | Testing or engineering assessment | Deviations or process change |
| Metal HAP vents | Yes | Testing or engineering assessment | Deviations or process change |
| Wastewater | Yes | No | Deviations or process change |
| Storage tanks | Yes | No | Deviations or process change |
| Cooling towers | Yes | No | Deviations, delay of repairs, or process change |
| Equipment inspections | Yes | No | Deviations, delay of repairs, or process change |

# Title V Permitting

- We proposed to exempt CMAS area sources from Title V permitting, but negative comments prompted us to reconsider the makeup of the area sources comprising the CMAS source category

- Final rule requires "synthetic" area sources that installed controls to keep them below major source thresholds to obtain a Title V permit
  - More than 10% of facilities are synthetic area sources for HAP by virtue of installation of controls
  - At least 7 of these facilities have uncontrolled HAP emissions over 100 tpy
  - These facilities are generally larger and more complicated and have large environmental staffs
  - Permits assure continued compliance with synthetic status and allow citizens' access to information
  - In summary, we believe the title V requirements should be the same for a major source that installed a control device after 1990 to become an area source as for a source that is major and installed a control device to comply with an applicable major source NESHAP

# SSM Exemption

- Proposed CMAS rule included the startup, shutdown, and malfunction (SSM) exemption in the General Provisions
- During the comment period the Court vacated this SSM exemption
- Final CMAS rule removes the SSM exemption
  - Rules apply during SS for every emission point except continuous process vents
    - For these, less stringent HAP emission limits apply (85%)
  - Rules apply during malfunctions for every emission point

# Litigation

- American Chemical Council (ACC) and Society of Chemical Manufacturers and Affiliates (SOCMA) filed a protective petition for review of the CMAS rule.
- On February 12, 2010, the Administrator received a petition for reconsideration from the ACC and SOCMA.
- EPA's first status report due to the court on May 26, 2010.
- Provisions that were not a logical outgrowth of the proposal
  - Requirement for Title V permits for sources that installed controls after 1990
  - Requirement for sources subject to overlapping standards to comply either independently with each subpart or with the most stringent requirements of individual provisions in subparts
  - Requirement for "direct and proximal (thorough) inspection of all areas of potential leak"
  - Requirement that process vessels be equipped with covers that must be in place at all time, except for material addition and sampling
  - Requirement for inspections to occur only at times when equipment is in HAP service
  - Applicability is based on family of materials as opposed to specific product
- The final rule should include a minimum threshold below which the rule would not apply.
- The final rule should exempt facilities that engage in R&D activities for customers such as major pharmaceutical companies.

# Available Implementation Tools

- http://www.epa.gov/ttn/atw/area/arearules.html#final
  - Area Source Rule Home Page on TTN
- http://www.epa.gov/reg3artd/airregulations/delegate/appdet.pdf
  - How to Review and Issue Clean Air Act Applicability Determinations and Alternative Monitoring (Attachment 1 is July 10, 1998 memorandum from John Seitz delegating Part 63 General Provisions authority to State and local agencies)
- http://www.epa.gov/Compliance/monitoring/programs/caa/adi.html
  - Applicability Determination Index.
- http://www.epa.gov/ttn/atw/area/fr29oc09.pdf
  - FR Notice for final rule
- http://www.epa.gov/ttn/atw/area/fr06oc08.pdf
  - FR Notice for proposed rule